



Case Report

Symptomatic H- type gallbladder in a male patient: A rare case report from Syria



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ABSTRACT

Introduction and importance: Double gallbladders are a rare anomaly occur in biliary system during the fetal life. In most cases they are asymptomatic, but in few patients, they can progress as a severe disease. Preoperative diagnose is essential in order to prevent surgery complexities and prevent the undesired complications.

Case presentation: We described a typical case of symptomatic duplicate gallbladder in a 42-year-old man who suffered from chronic abdominal symptoms without determining the cause. The accessory gallbladder was discovered by imagining screening tools which included ultrasound and magnetic resonance cholangiopancreatography and was treated successfully with laparoscopic cholecystectomy, where both gallbladders were removed without any complications.

Clinical discussion: Double gallbladder are rare abnormality occur in fetal life during the fifth and sixth weeks of pregnancy. In most cases they show zero symptoms and can be easily wandered off during typical preoperative screening. Therefor many diagnostic tools were developed to investigate this anomaly in order to prevent its unwanted outcomes and to help the surgeon in deciding the best surgical approach for each presenting case.

Conclusion: In order to prevent complications during surgery, it is vital that we investigate the presence of a double gallbladder in a surgical patient before the procedure.

1. Introduction

Accessory gallbladder (GB) is a rare congenital abnormality was reported in 1/4000 of all human population (R1). The symptoms may vary from silent to non-standard symptoms (R2), so in most cases, it is first discovered during the operation work (see Figs. 1 and 2).

Even so it is tricky to detect a double gallbladder before surgery, the surgeon must be aware to the anomaly possibility in order to prevent complications and undesired consequences that can happen after the operation.

We describe a case of H-type double GB In a 42-year-old male which was diagnosed preoperatively using ultrasound and magnetic resonance cholangiopancreatography (MRCP) and treated efficiently with laparoscopic cholecystectomy.

2. Case report

A 42-year-old man came to our hospital complaining from recurrent episodes of abdominal pain for 8 years associating with constant right hypochondriac bloating. The ache was described to be colic, extending into the epigastric and intrascapular regions, unaccompanied with vomiting or hyperthermia, worsening after food and physical exercises and improving after rest or after taking anti spasms and painkillers. The patient has been diagnosed with irritable bowel syndrome (IBS) and has been undertreatment for 5 years, yet, there were not any improvement in his symptoms.

On clinical examination the abdomen showed as soft and symmetric. The pain spread out to periumbilical region; Murphy's sign was positive, and hematological tests (CBC, bilirubin, amylase, proteins, and blood electrolytes) reported all to be normal. We, therefore arranged further examinations to examine the patient. An abdominal sonography

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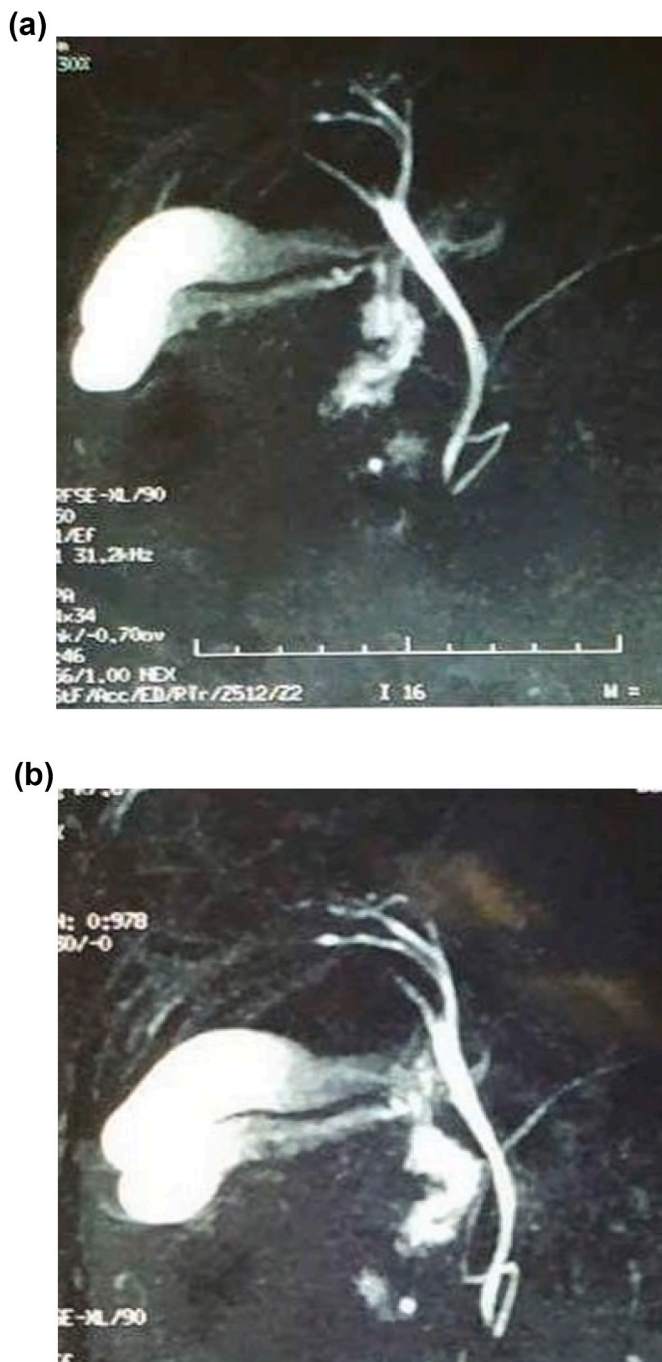


Fig. 1. Magnetic resonance cholangiopancreatography: duplex gallbladders of H-type, each with one separately cystic duct.

revealed an interceptor barrier in the gallbladder which made us suspect in a biliary anomaly. Then as described in the guidelines, a following MRCP was performed and it exposed a pair of separate gallbladders and their own cystic ducts which both of them then flow into the common bile duct. The inferior gallbladder had a signal void represented a gallstone that measured 8 mm in diameter. The examinations with ERCP and fluorescent angiography have not been performed as the radiological findings with MRCP were clear and enough to diagnose the duplication. Then a laparoscopic surgery was scheduled.

During the operation, the two gallbladders were found under the liver and one of the them was almost completely inserted into the liver. The cystic duct and the bile artery have been isolated from each gallbladder. Each bile artery and bile duct have been clipped, cut, and the

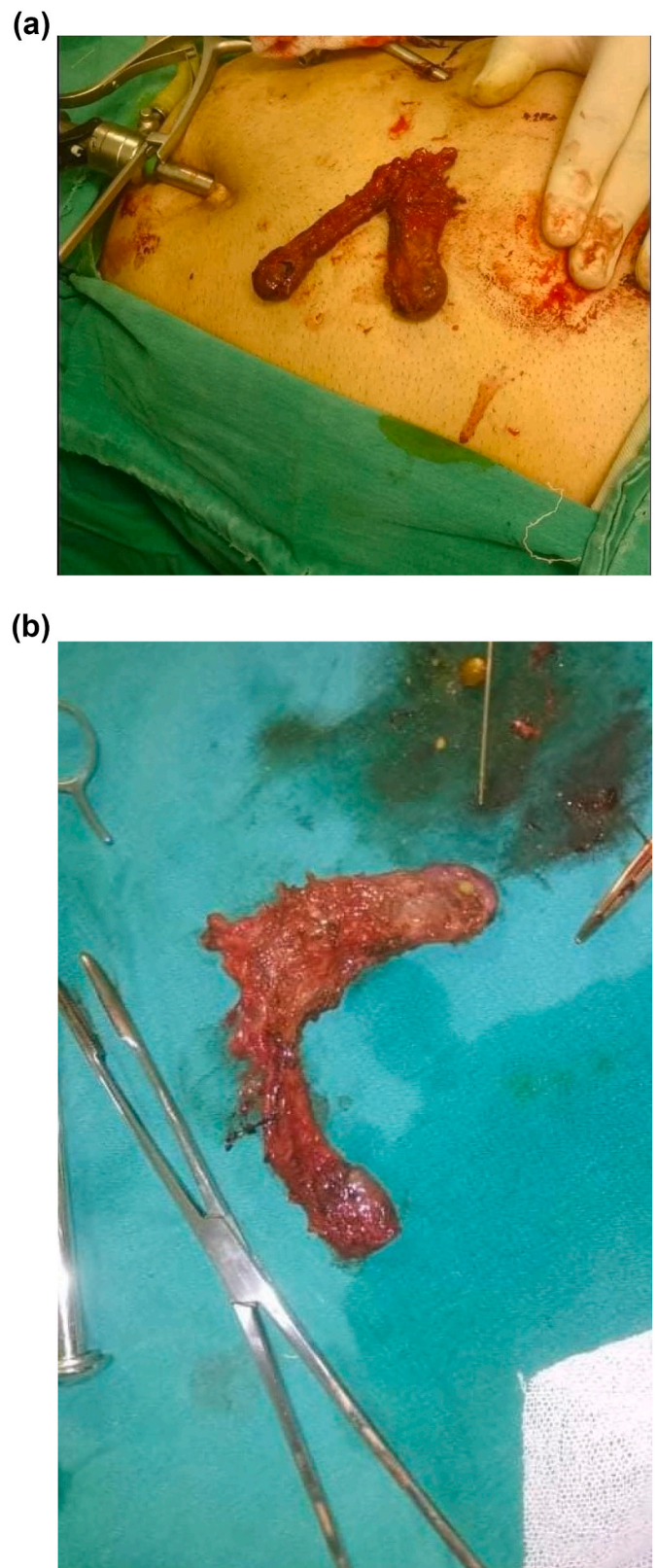


Fig. 2. Gallbladder duplication with duplicated cystic ducts.

gallbladders removed as one unit. Washing and hemostasis were performed. A rotating detonator was placed under the liver. Once the skin had been closed with a sterile bandage, the two gallbladders were sent to the pathology lab for examination.

The procedure was accomplished without any trauma, bleeding or

other complications in no longer than 100 minutes.

3. Discussion

Gallbladder duplication is a unique anomaly (R3) was documented for the first time by Sherren in 1911 (R4). It develops typically from biliary tract (R3) during the fetal life between the 5th and 6th weeks of pregnancy (R5). Its occurrence rate equals 0.026% of all patients who underwent autopsy (R5). As far as we know, the extrahepatic portion's developing bulges in biliary tree form the duplicate gall bladder (R5). These excessive bulges naturally revert; however, if any of them continues growing it will lead eventually to create the double.

GB (R1).

Different classifications were suggested to categorize these anomalies (R4). On one hand Boyden (R6) divided them into two classes; bilobated gallbladder and factual duplicate where two cystic cannels subsist and, observationally, is considered the most common type. On the other hand, Harlaftis (R7) systemized them into three main classes and multi subclasses. The two subcategories of type 2 are trabeculate and H-shaped subtype, which is represented in our case.

The presence or absence of sickness in accessory gallbladder depends on the presence or absence of complications (R1) which are caused by the same Pathogenic factors that are indicted in complicated mono gall bladder (R1). Similar to our patient's case who had been suffering from nonspecific symptoms as a result to cholelithiasis, not because of duplication.

It is difficult to build an accurate diagnose before surgery (R3). As cholecystic abnormalities may not develop any symptoms (R4) and can be wandered off in a preoperative screening (R4). Therefore, many procedures are used to investigate this anomaly, such as computerized tomography, magnetic resonance cholangiopancreatography, and Endoscopic retrograde cholangiography (R3).

Although abdominal ultrasound is the earliest (R3) and most used examination to evaluate biliary disorders (R8), it is incapable to examine cholecyst and bile trucks anatomy accurately (R3). It is able to reveal gallbladders numeral, inflammatory signs and even detect bile flow blocking (R1), but it can be limited in distinguishing bilobed gallbladder and real duplication (R5). Hence a following magnetic resonance proved to be an effective technique for better investigating and evaluation (R8).

ERCP is considered as the standard exam to confirm the duplication (R5). Even though it is an invasive procedure with high false-negativity (R2).

While MRCP is able to detect the duplication type and reveal all required information before surgery without any invasiveness(R2), therefore it is widely used and reliable in evaluating gallbladder patients.

The preferred method to process duplex gallbladder has not yet been established (R4). As stated by Safioleas (R9) the surgical necessity is doubtful in symptomless patients as cholelithiasis occurrence equals in single and double gallbladders. In accidental cases, both gallbladders should be considered if the surgical approach was approved (R3).

Through deep diving into the literature, laparoscopic surgery is considered the preferred procedure for type one duplication while the favored intervention for type 2 is open surgery (R5). In H-type double gallbladder intervention there is a high potential to damage the biliary ducts and arteria hepatica (R8). Hence, it is essential to identify gallbladder type in order to determine the preferred surgical approach for each patient. after scrutinizing all radiological examination for our case specially the Endoscopic retrograde cholangiopancreatography results, laparoscopic cholecystectomy was established as the most appropriate method to treat the patient. Three days after confirming the diagnosis, laparoscopic cholecystectomy was performed. The symptoms improved and the patient was pleased with surgery results. Our work was reported according to the SCARE 2020 criteria. (R10)

4. Conclusions

Even the double gall-bladders are usually asymptomatic and missed in preoperative imagining, we described an H-type duplex gallbladder associated with chronic symptoms, diagnosed during investigating abdominal problems using imaging tests and was treated with laparoscopic cholecystectomy.

Ethical approval

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Author contribution

All authors contributed in all the phases of preparing the paper.

Registration of research studies

- 1 Name of the registry.
- 2 Unique Identifying number or registration ID.
- 3 Hyperlink to your specific registration (must be publicly accessible and will be checked).

Guarantor

Prof. Dr. Ali Muhammad Alloush.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Availability of supporting data

"Not applicable".

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Declaration of competing interest

The Authors declare that there is no conflict of interest.

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List of abbreviations

GB	gallbladder
IBS	irritable bowel syndrome

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.amsu.2022.103885>.